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Climate trends in barometric circulation regime and the thermal state in the Northern Hemisphere and its individual regions

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Abstract

The space-time variability of atmospheric pressure fields, the air temperature and wind velocity in the troposphere of the Northern Hemisphere within the period from 1948 to 2013 has been described. A delay of air temperature low-frequency component against the atmosphere zonal circulation variations in the 30-70° N latitude zones in winter time has been revealed. The share of the wind velocity component in the temperature variation is 60%. As an example, the air temperature response to the impact of a number of circulation systems in the Volga region has been considered.

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Keywords

Air temperature, Atmospheric pressure, Circulation indexes, Correlation coefficient, Macro-circulation system, Zonal wind